

Application of the Holistic Approach to Environmental Compliance in the Batch Chemical Manufacturing Industry

Presented by

David J. Mason, Vice President, Regulatory and Public Affairs, Hatco Corporation

Jeff Gunnulfsen, Manager, Government Affairs, Synthetic Organic Chemical Manufacturers' Association

Presented at

National Compliance Assistance Providers Forum

December 3-6, 2002

San Antonio, Texas

Cosponsored by

U.S. Environmental Protection Agency
and Texas Commission on Environmental Quality

Disclaimer

U.S. Environmental Protection Agency (U.S. EPA) solicited from compliance assistance providers presentations aimed at sharing expertise, building skills and networking. The following presentation is intended as a resource for providing assistance regarding compliance with environmental regulations. U.S. EPA neither endorses nor assumes responsibility for the accuracy and completeness of non-EPA materials contained herein. EPA does not necessarily endorse the policies or views of the presenters, and does not endorse the purchase or sale of any commercial services or products mentioned in this presentation.

National Compliance Assistance Provider Forum 2002

One Approach to Environmental Compliance in
the Batch Chemical Manufacturing Industry

Jeff Gunnulfsen
Manager, Government Affairs



Background on SOCMA

- Over 300 Members
- 75% small businesses (SBA definition)
 - Most have less than 100 employees
 - Less than \$100 in annual sales
- Member facilities in 47 states
- Manufacture specialty chemicals
 - Batch manufacturing
- All manufacturing members participate in chemical industry's Responsible Care[®] program



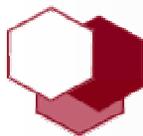
Specialty – Batch Chemistry

- Specialty chemicals
 - 90% of chemicals manufactured in US
 - Active ingredients and intermediates for production of commercial and consumer goods
 - Supplies
 - Auto industry, pharmaceuticals, agricultural, paints and coatings, industrial & household cleaners, cosmetics, toiletries and beauty supplies, food preservatives etc....



Specialty – Batch Chemistry

- **Batch Manufacturing**
 - Provides efficient method to make small quantities of chemicals to meet specific needs and consumer demands for specialized products
 - Intermittent introduction of frequently changing raw materials, varying processes, changing conditions due to ever-changing product demand
 - Provides for tremendous product fluctuation and flexibility to meet changing customer demands



SOCMA

Synthetic Organic Chemical Manufacturers Association

1850 M Street NW • Washington, DC 20036-8510 • Phone (202) 721-4100 • Fax (202) 721-1820 • WWW.SOCMA.ORG



Batch - Specialty Compliance Challenges

- One-size-fits all regulations
 - Batch manufacturers tend to have greater variety of waste streams, air emissions, water emissions, and wastes.
 - Greater paperwork burden due to fluctuation in production lines (e.g. TSCA PMNs, IUR reports, etc.)
 - Nature of the process requires different methods for handling wastes (e.g. cleaning vessels, pre-treatment)
- Resources
 - As small businesses, fewer financial resources to dedicate to EH&S activities
 - Environmental personnel wear multiple hats



Management Challenges

- All companies face management challenges
 - Staffing
 - Information
 - Operating flexibility



Management Challenges

- But the force of the impact on smaller companies is much more significant!



Staffing

- **Resources**
 - As small businesses, fewer financial resources to dedicate to EH&S activities
 - Environmental personnel wear multiple hats
- **Downsizing**
- **Turnover**
- **Training**



Information

- **Too little**
 - Staff may not be familiar with resources
- **Too much!**
 - Staff are familiar with resources
- **No access to outside help**
- **No corporate structure or lack of support**
- **Afraid to dialog with regulatory agencies**



Operating Flexibility

- The size of the site vs. number of applicable regulations is **NOT** a linear relationship!
 - Example: Specialty batch manufacturer; approximately 110 employees
 - Over 150 applicable environmental regulatory conditions
 - Over 38 reports submitted annually



SOCMA Compliance Assistance Efforts

Active in compliance assistance efforts with EPA

- NJ Project
- PTE Guidance
- Sustainable Industries Program
- ChemAlliance
- Performance Track Network Partner
- Numerous regulation-specific workshops

SOCMA also develops compliance assistance manuals/programs

- Risk Management Planning Rule
- *Global Chemical Regulations Conference* Workshop
- TSCA Manual and Checklists
- MultiMedia Water Rules
- Pollution Prevention Manual
- cGMP
- OSHA Injury & Illness Record keeping Tool
- Site Security for the US Chemical Industry
- SOCMA Manual on Chemical Site Security Vulnerability Analysis Method & Methodology
- Model Storm Water Plan



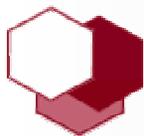
Ways to Identify Compliance Assistance Needs

- Take a sector-based approach
- Talk with the EH&S managers at batch-specialty facilities
- Look at enforcement trends and compare numbers between various sectors of the industry
 - SOCMA members interact more with States— as an association we would be interested in State compliance trends



Ways to Provide Compliance Assistance

- Work with the industry sector and partner in the development of plain language guides or small business guides
- Provide enforcement discretion and advice in lieu of penalties for smaller companies struggling to comply
- Our EHS managers wear many hats—need timely, concise compliance guides & workshops in focused topics



SOCMA

Synthetic Organic Chemical Manufacturers Association

1850 M Street NW • Washington, DC 20036-8510 • Phone (202) 721-4100 • Fax (202) 721-1820 • WWW.SOCMA.ORG



Ways to Provide Compliance Assistance

- Comply with the Small Business Regulatory Enforcement Fairness Act (SBREFA)
 - Use comments generated in panel process
- Allow ingenuity and creativity
 - Specialty batch sector very entrepreneurial – let sector develop alternative compliance methods that continue to protect the environment
- Work with SBA/OSHA/OMB



Overcoming Impediments to Compliance Assistance

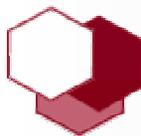
Need to understand difference between commodity and batch chemical manufactures:

- Big vs. small
- Resources vs. limited resources
- Specific job duties vs. multiple
- “One size does not fit all” applies not only to regulations, but also to compliance tools



Impediments to Identifying and Implementing Compliance Assistance

- **Build Trust**
 - SOCMA has worked with EPA Office of Policy on a Sector approach
 - Studies, surveys, site visits, working with program offices
 - EPA Forums
 - Regional Outreach
- **Better understanding of sector than in past**



SOCMA

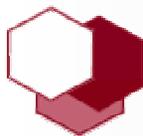
Synthetic Organic Chemical Manufacturers Association

1850 M Street NW • Washington, DC 20036-8510 • Phone (202) 721-4100 • Fax (202) 721-1820 • WWW.SOCMA.ORG



Next Steps

- **SOCMA will continue working with EPA**
 - Compliance Assurance Office
 - Office of Policy
 - Regulation and Program specific efforts—
MON/YYY
 - Reaching out to ECOS/ASTSWMO, Air & Waste Management



SOCMA

Synthetic Organic Chemical Manufacturers Association

1850 M Street NW • Washington, DC 20036-8510 • Phone (202) 721-4100 • Fax (202) 721-1820 • WWW.SOCMA.ORG



SOCMA Contacts

For more information on SOCMA, visit us at www.socma.org.

Contacts

- Jeff Gunnulfsen (202) 721-4198
 - Manager, Environment Committee
- Angela DeConti (202) 721-4170
 - Manager, Air Issues; Employee & Process Safety Committee
- James Cooper (202) 721-4158
 - Manager, Chemical Risk Management Committee
- Rob McArver (202) 721-4122
 - Director, Govt. Relations
- Kathleen Shaver (202) 721-4182
 - Vice President, Industrial Relations



HOLISTIC APPROACH TO ENVIRONMENTAL COMPLIANCE AND MULTI-MEDIA COMPLIANCE PLAN DEVELOPMENT

Presented at
U.S. EPA'S National Compliance
Assistance Providers Forum 2002
December 4-6, 2002

David J. Mason
VP Regulatory Affairs
Hatco Corporation



INTRODUCTION

- Batch chemical manufacturing facilities face many complex and pressing compliance and enforcement situations.
- Reporting, recordkeeping, and similar information management tasks make up the bulk of the activities performed to comply with environmental rules and regulations.
- The batch chemical sector must now deal with more than 24 major Federal environmental laws.

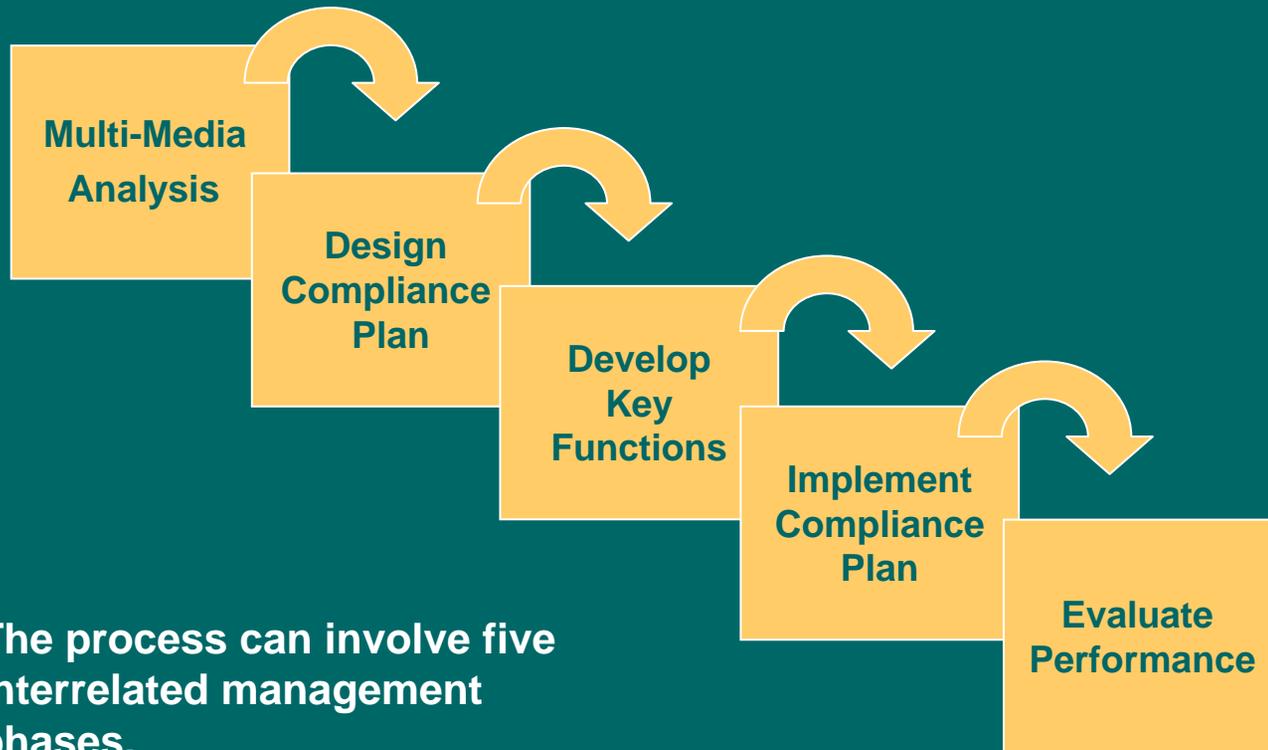
PRESENTATION OVERVIEW

- This session discusses the environmental compliance challenges small batch chemical manufacturing facilities face;
- What they do to avoid common pitfalls and ensure compliance with environmental rules and regulations; and
- Suggests compliance tools that small batch chemical manufacturing facilities seek.
- It addresses how and why a holistic approach should be incorporated into environmental compliance management.

HOLISTIC APPROACH

- The holistic approach is a systematic process for making compliance management decisions and developing compliance plans in a multi-media manner.
- It increases understanding of the mission, goals, and objectives, develops key functions, improves performance and reduces the number of hours spent preparing or managing paperwork through the repetitive key functions in the various compliance tasks.
- The intent is to achieve continuous improvement of the environmental performance using cost-effective and burden reducing practices and procedures.
- The desired outcome is an integrated management system that supports batch chemical processes and enables them to address most environmental problems and reduce economic burdens.

DECISION MAKING PROCESS



The process can involve five interrelated management phases.

PERFORM MULTIMEDIA ANALYSIS

- Determine regulatory requirements applicable to batch chemical operations.
- It involves identifying applicable legal and other requirements and ensuring integration of these requirements into the entire manufacturing efforts.
- These other requirements might include industry codes, such as the Responsible Care Initiative, or similar programs to which the organization may subscribe.

COMPLIANCE CHALLENGES

- The initial phase involves a detailed analysis of the conditions, events and activities that trigger or give rise to various environmental compliance requirements.
- For a batch chemical company, this would include rules under practically all environmental laws including but not limited to CAAA, CWA, TSCA, SARA, EPCRA, RCRA, SDWA, and OPA.
- The outcome of this phase is a comprehensive list or inventory of multi-media regulatory requirements applicable to batch chemical operations. (See handout 1)

COMMON PITFALLS

- Environmental professionals in the batch chemical sector often patch together their own processes for analysis of the conditions, events and activities that trigger them.
- A common pitfall includes usage of outdated media specific checklists and inventories that do not provide an efficient process to prepare the required analysis.
- Without a comprehensive listing of compliance tasks and applicability designed to handle all media, they fail to identify and understand all relevant legislation, regulations, industry codes of practices, and incident history.

DESIRED TOOLS

- Compliance tools that assist environmental professionals identify multi-media requirements in very simple and visual ways.
- Checklists, inventories, flowcharts of rules under CAAA, CWA, TSCA, SARA, EPCRA, RCRA, etc.,
- Comprehensive listing of compliance tasks and applicability.
- Multi-media compliance calendar that combines regulatory reporting dates.
- Analytical tools to identify conditions, events and activities that trigger requirements.

DESIGN COMPLIANCE PLAN

- Create mission statement, vision, goals, performance objectives, metrics, and schedules.
- Develop a budget for implementing applicable regulatory requirements.
- Get the necessary buy-in to carry out the plan.

COMPLIANCE CHALLENGES

- The design phase is the process of deciding exactly how to implement the multi-media compliance tasks.
- This decision-making phase insures the systematic development of the multi-media compliance program. The inventory of multi-media regulatory requirements from the initial phase drives this process.
- The outcome of this phase is a holistic model or blueprint of the multi-media compliance program that includes a mission statement, vision, goals, performance objectives, metrics and schedules. (See handout 2)

COMMON PITFALLS

If you do not design the holistic plan adequately, it could produce different results from what you intended. To avoid this pitfall you must:

- **Identify and understand all relevant regulatory requirements.**
- **Assess the current environmental performance and provide guidance on desired compliance implementation.**
- **Create a vision for the desired status and develop a plan to realize such.**
- **Develop metrics that will drive the desired behavior.**
- **Prepare a compliance calendar to track all of these activities.**

DESIRED TOOLS

You need tools for coordinating and implementing the inventory of multi-media regulatory requirements applicable to your operations. Examples of needed tools include:

- A model multi-media compliance plan and benchmarking tools
- Comprehensive lists of prototypical performance objectives and measures.
- Time management and project planning tools
- Good examples of environmental mission statement, vision, goals
- Guidance documents for making environmental compliance decisions.

DEVELOP KEY FUNCTIONS

- This phase enlarges the compliance plan produced in the design phase.
- It involves developing systems that bring together people, materials, technology and time to perform key environmental compliance functions.
- Develop and document site-specific procedures and subsystems to deal with environmental compliance issues.

COMPLIANCE CHALLENGES

- The challenge in this phase is to bring together the right people, materials and resources to produce a desired consequence .
- For example, bringing together a wastewater treatment team (people) who treat process wastewater (materials) in a biological unit (technology), and monitor discharge within a given deadline (time). The final effluent (output) meets the discharge limits.
- The outcome of this phase is a collection of key functions or a management system that make the compliance plan work. (See handout 3)

COMMON PITFALLS

- Common pitfalls include the failure to develop and document site-specific procedures and to provide needed resources to sustain and control multi-media compliance.
- To avoid pitfalls, use management systems to direct the company towards accomplishing the compliance mission.
- Select and develop appropriate systems, such as the following:
Organizational Structure, Staffing, Training, Management Support, Reporting and Recordkeeping, Communication and Information, and Substances Inventory

DESIRED TOOLS

Environmental management initiatives such as Responsible Care and ISO 14000 are useful tools to develop key functions. Other suggested tools include:

- Tools to assist environmental managers, engineers, and specialists develop site-specific procedures for dealing with environmental compliance issues;
- Access to model plans, work practices, monitoring, reporting, recordkeeping techniques;
- “How to manuals” for compliance tasks; and
- Guides that illustrate specific procedures in simple and visual ways.

IMPLEMENT COMPLIANCE PLAN

- A well-defined compliance plan should bring together the considerable number of compliance tasks that challenge the manufacturing facility.
- In phase, the batch chemical manufacturer performs the compliance tasks in accordance with the plan and tries to coordinate and synchronize them with new and existing business activities.
- Information management tasks such as preparing letters, plans, notifications, and permit applications make up over ninety percent of what it takes to comply with most environmental laws and regulations.
- The outcome of this phase is the implementation of environmental compliance requirements to achieve and sustain the highest level of environmental compliance.

COMPLIANCE CHALLENGES

- To implement the compliance plan, batch chemical manufacturers perform procedures developed in Phase 3. Successful implementation of the compliance plan will reside with the senior environmental leadership and operational management.
- The outcome of this phase is the implementation of the comprehensive compliance management program to achieve and sustain that highest level of environmental compliance.
- Performance indicators are fundamental tools that can be used by regulated entities to analyze environmental performance and trends. (See handout 4)
- Performance indicators are outcome attributes that characterize and analyze performance trends.
- They help to achieve results that go beyond compliance with regulations and serve as the objective criteria for a meaningful assessment of progress.

COMMON PITFALLS

Common compliance pitfalls include:

- Report Submissions and Reporting - Failure to submit required reports or the submittal of incomplete or inaccurate reports to the regulating agency;
- Exceedances - Failure to meet discharge limits, as defined in the facility's permit or by regulation;
- Operations and Maintenance - Noncompliance of an operations and maintenance nature; and
- Record Keeping - Failure to maintain operating records or files in accordance with regulations.

DESIRED TOOLS

- The workshops, seminars and management of change tools that show how to develop performance indicators.
- Tools that help demonstrate compliance and measures environmental performance.
- Tools that provide information on how to comply with regulations on a continuous basis
- Tools that explain compliance requirements in very simple and visual ways.
- Tools that ease the burdens of inadequate financial, material and human resources

EVALUATE PERFORMANCE

- Batch chemical manufacturing facilities must continually evaluate the practical results of environmental compliance in the work place and validate whether the objectives of the compliance program were met.
- On a periodic basis, top management must measure their own environmental performance as well as that of middle and lower management to make sure that they are mutually supporting and focused on the stated goals.
- The intent of performance evaluation is to make the program better by finding and fixing problems. It is not intended to lay blame.
- To assess the environmental performance and evaluate the effectiveness of the implemented compliance program, batch chemical manufacturers conduct audits.

COMPLIANCE CHALLENGES

- Evaluation is the process of determining the value and effectiveness of your compliance program.
- This phase may include assessments normally conducted during self-monitoring, regulatory inspections and area monitoring as well as audits.
- The outcome of this phase is a written system for assessing environmental performance and validating the compliance program. (See handout 5)
- Validation checks the extent to which management systems, established procedures or work practices achieve, demonstrate and ensure continuous compliance.

COMMON PITFALLS

Failure to assess environmental performance is a common pitfall throughout the sector.

- Assessing environmental performance is an important leadership responsibility that enables the company to identify sources of failure and missed opportunities when the observed outcomes differ from the intended outcomes.
- When adequately performed, it generates beneficial information that can inform, educate, and motivate. At the same time, inappropriate assessing can cause the company frustration and ethical dilemmas.
- Finalize the assessment, develop and follow a schedule for completion and tracking the status of the corrective action plan.

DESIRED TOOLS

- The multi-media compliance needs assessment and validation tools to provide data for the evaluation and an improvement plan to direct and track fixes. Tools to measure environmental performance
- Tools to measure management trends, strength, and weaknesses
- Sample environmental auditing protocols
- Up to date checklists for rules under CAAA, CWA, TSCA, SARA, EPCRA, RCRA, etc.

CLOSING STATEMENTS

- Batch chemical manufacturing facilities face many complex and pressing compliance and enforcement situations that tremendously impact business and operational decisions.
- Reporting, recordkeeping, and similar information management tasks make up the bulk of the activities performed to comply with environmental rules and regulations.
- The batch chemical sector needs CA providers who can help achieve continuous improvement of the environmental performance, reduce regulatory burden and increase cost-effectiveness.
- CA providers are most helpful when they know and can respond to compliance challenges, common pitfalls, and provide the desired tools.